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Authors of papers intended for publication in Food Technology should request from the Editor's office a copy of a booklet, titled "Suggestions to Authors," and see that their papers are in the form specified therein before they are sent to the editor.

The Institute of Food Technologists assumes no responsibility for statements in contributed articles appearing in Food Technology. Editorials present only opinions of the writers and do not necessarily reflect policies of the Institute of Food Technologists.

Abstracts

(Continued from page 2)

321I. Inactivation of amino acids by autoclaving.

EVANS, R. J., AND BUTTS, H. A. *Science, 109,* 561-71 (1949).

At least three types of reaction are involved in the inactivation of amino acids by prolonged autoclaving of a sucrose containing food or feed, such as soybean oil meal. Lysine, aspartic, and glutamic acids combine with some constituents of the protein, probably the free carboxyl with the free amino groups, to form enzyme-resistant linkages. The amino acids with free amino groups react with sucrose to destroy the amino acids. Protein-bound methionine, cystine and histidine with sucrose form linkages resistant to enzymatic hydrolysis *in vitro*.

322I. Foam fractionation procedures in the isolation of fruit proteins.

DAVIS, S. G., FELLERS, C. R., AND ESSELEN, W. B. JR. *Food Tech., 3,* 198-201 (1949).

Application of foam fractionation procedures provided a highly satisfactory method for fractionating the protein complex from extracts of apple tissue. Analysis of the complex showed it to consist of a number of protein systems closely combined with a phlobaphene or similar tannin-like compound. The complex possessed certain solubility characteristics which indicated that the capillary activity of the material may be dependent on particular groupings in the protein molecule. Foam fractionation procedures may provide highly practical methods not only for isolation of traces of material in solution or suspension, but also for purification of certain mixtures in which undesirable substances are capillary active or may be made capillary active.

323I. Growth-depressing fractions in raw beans.

KLOSE, A. A. et al. *Arch. Biochem., 22,* 215-23 (1949).

A growth inhibitory protein function similar in gross effect to that of soy bean was isolated from lima beans. Steam heating markedly increased the growth promoting quality of the lima bean, optimum conditions for processing being similar to those for the soy bean.

324I. Analysis of the essential structural features of DDT by a study of the toxicity of closely related compounds to roaches and to houseflies.

PICARD, J. P., AND KEARNS, C. W. *Canadian J. Res., 27D,* 59-67 (1949).

Three series of compounds have been prepared and compared for the insecticidal activities against German roaches and houseflies. The substituted *2, 2-* diphenyltrichloroethanes and substituted benzohydrols have been found to have comparable activities on roaches. The substituted *2, 2*-diphenyltrichloroethanes alone had insecticidal properties against houseflies. The benzophenone derivatives were ineffective against both groups of insects.

MICROBIOLOGY

325I. Rumen bacteria in cobalt-deficient sheep.

GALL, L. S. et al. *Science, 109,* 468-9 (1949).

In cobalt deficiency, marked alterations occur in the types and numbers of bacteria in ruminants, and these bacteriological changes are not caused by lowered feed intake of the deficient animals.

326I. Making liquid carbohydrate-rich foods resistant to microorganisms.

COLEMAN, G. H., AND WOLF, P. A. Assignors to The Dow Chemical Company, *2,474,226,* June 28, 1949.

The method of imparting to a fruit juice an increased resistance to attack by microorganisms which comprises dissolving in such a minor but effective amount of a compound selected from the class consisting of dehydroacetic acid and its sodium potassium, ammonium and calcium salts.

327I. Making carbohydrate foods resistant to microorganisms.

COLEMAN, G. H., AND WOLF, P. A. Assignors to The Dow Chemical Company, *2,474,227,* June 21, 1949.

The method of imparting to foods rich in carbohydrates an increased resistance to attack by microorganisms which comprises bringing into contact with such foods a compound selected from the class consisting of dehydroacetic acid and its sodium, potassium, ammonium and calcium salts.

328I. Influence of the amino acid-dextrose reaction on growth of lactic acid bacteria.

ROSE, D., AND PETERSON, R. *Canadian J. Res., 27B,* 428-36 (1949).

Growth of *Lactobacillus arabinosus, L. casei,* and *Streptococcus faecalis* (as measured by lactic acid production) was studied in relation to the effects of the products of the amino acid—reducing sugar (Maillard) reaction. Addition of preformed Maillard products to a medium had little or no effect. Medium that had been autoclaved after the addition of dextrose promoted more rapid growth (shorter lag phase) than medium for which the dextrose had been autoclaved separately. This effect could not be traced to the presence of Maillard products, but appeared to be a complex phenomenon depending in part on the *Eh* of the solution. Destruction of amino nitirogen occurred during autoclaving and destruction of tryptophan was evident from a comparison of growth response curves. It is concluded that the Maillard reaction affects the growth of these organisms only when an essential amino acid (or other nutrient), present in limiting quantities, is destroyed by the reaction. A serious error may be introduced into microbiological assays for amino acids if the samples to be assayed contain dextrose.

329I. The production of antibiotics by soil microorganisms.

BRIAN, P. W. *Chem. and Ind.,* No. 25, 391-2 (1949).

The production of antibiotics is common to all kinds of soil microorganisms, and these antibiotics have varied biological and chemical properties. Soil bacteria known to produce antibiotics fall into two groups, spore-forming bacilli and fluorescent pseudomonads. The former group produce antibiotics which show great specificity and are polypeptides, while the latter group produce antibiotics of general toxicity, and are highly coloured phenazine derivatives. The chemistry of antibiotics produced by actinomycetes and fungi is still relatively unknown, but their toxicity has been studied.

NUTRITION

330I. Relative cost of nutrients in a serving of food.

ROLLINS, M. Ithaca, N. Y. Agri. Expt. Sta. *Bull No. 845* (1948).

Since vitamins A and C tend to be found in foods that do not supply many other nutrients cheaply, these dietary essentials need to be planned for, and the cheap sources kept in mind for a low-cost diet. Homemakers who wish to supply an adequate diet cheaply to their families might well emphasize the use of the following foods; white potatoes, whole wheat bread, rolled oats, beef liver, pig liver, pea beans, rutabagas, carrots by the pound, spinach, and milk, fresh and canned. Servings of the food providing nutrients cheaply may not provide large quantities of the nutrients. Larger and more frequent servings of these foods may offer a way to better nutrition at low cost.

331I. The use of Rosa canina for the preparation of vitamin-rich foods.

LA PAROLA, G., AND PRUNER, G. *Ann. Chim. appl. Roma, 35,* 148-60 (1945); *Nutr. Abst. Rev. 18,* 790, No. 4423 (1949).

Analyses were made on 4 varietieis of wild rose hips for the content of ash, fatty acids and vitamin C. The ascorbic acid content in mg. per 100 g. ranged from 540 to 685 for the whole fruit, from 920 to 1140 for the fresh pulp and from 2085 to 2561 for the dried pulp. A table of vitamin C values for some common foods is given to illustrate the high content in rose hips and their value as a possible addition to other foods.

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Abstracts

(Continued from page 4)

332I. Nutritive value of common salt.

MHASKAR, K. S. *J. Indian Med. Assoc., 17,* 120-7 (1948); *Nutr. Abst. Rev., 18,* 403, No. 2323 (1948).

The role of salt in nutrition is reviewed. Indian salt obtained by evaporation of sea water in open pans is stated to have the following % composition: NaCl 87.90, $MgCl_2$ 4.29, $MgSO_4$ 2.67, $CaSO_4$ 1.76, the residue being insoluble matter and unidentified impurities. It is considered that ¼ oz. daily of this impure salt is a safe allowance for an adult vegetarian under Indian conditions, and that no harm is likely to result from the presence of the Ca and Mg salts.

333I. Xanthopterin in animal nutrition.

Nutr. Revs., 7, 131-3 (1949).

A review of recent work on xanthopterin indicates that it may be the "active" form of folic acid. An optimum concentration of xanthopterin (mg. per kg. body weight) injected into anemic rats caused an immediate spectacular rise in red cell count, reticulocyte count, white cell count, hematocrit and hemoglobin concentration, whereas the increase in these values after injection with folic acid was delayed as much as 3 to 5 days. Higher concentrations of xanthopterin were not as effective, and in normal non-anemic rats, xanthopterin injections proved to produce polycythemia and leucocytosis.

334I. The utilization of lactose by the mature fowl.

COUCH, J. R., et al. *J. Nutr., 38,* 105-13 (1949).

Laying hens fed a purified diet with lactose as the carbohydrate, ceased laying in one to two weeks after being placed on the diet. 30% fat in the diet corrected the deleterious effect of lactose on egg production. High levels of lactose appeared not to effect hatchability.

335I. The effect of fish meal and extracts of fish meal on hatchability of hens' eggs and growth of progeny.

PENSACK, J. M., BETHKE, R. M., AND KENNARD, D. C. *Poultry Sci., 28,* 398-405 (1949).

Two experiments with hens showed that a diet of yellow corn, oats, wheat by-products, dehydrated alfalfa meal, soybean oil meal (expeller), minerals, and adequate vitamins A, D, and riboflavin, is deficient in a factor essential for good hatchability. The essential hatchabality factor was present in sardine fish meal and was soluble in 80% hot ethanol and was adsorbed by Darco G-60 at pH 3.0 from a water solution of an ethanol extract of fish meal, but was not adsorbed at pH 3.0 from an 80% ethanol solution of a similar extract. Sardine fish contains a growth factor(s) which is transmitted from the hen through the egg to the chick.

FOOD PRODUCTS

CEREALS, GRAINS AND BAKERY PRODUCTS

336I. Collaborative analysis of wheat, oats, and barley for thiamine and riboflavin.

SPENCER, E. Y., et al. *Canadian J. Res., 27F,* 194-8 (1949).

In the analysis of wheat, oats, and barley for thiamin and riboflavin by three collaborating laboratories, an attempt was made to reduce interlaboratory differences to a minimum by the establishment of a standardized procedure. The thiochrome and fluorometric methods were used for the thiamin and riboflavin determinations respectively. It was apparent that even after steps had been taken to standardize the assay procedures, small but consistent and significant interlaboratory errors existed. Calculations indicate that differences of the order of 10 to 12% in mean assay values were necessary before samples could be considered different with respect to their thiamin or riboflavin content.

337I. Effect of heat treatment of separated milk on the physical and baking properties of doughs enriched with dry milk solids.

LARSEN, R. A., JENNESS, R., AND GEDDES, W. F. *Cereal Chem., 26,* 189-200 (1949).

The three major components of nonfat dry milk solids, casein, lactose, and the milk serum proteins, were heated in solution for 30 minutes at 70° C., 75° C., and 80° C., and incorporated into doughs in amounts equivalent to the addition of 6% of non-fat milk solids. The unheated fractions all depressed loaf volume with lactose having the greatest effect. In the absence of potassium bromate, heat treatment improved the baking quality of the milk serum proteins considerably, but had no effect on the baking behavior of casein or lactose. Inclusion of bromate in the baking formula increased the loaf volume when unheated milk serum proteins were added to doughs; bromate also somewhat improved the baking results with lactose.

DEHYDRATED FOODS

338I. Mashed potato powder. IV. Deterioration due to oxidative changes.

J. Soc. Chem. Ind., 68, 149-51 (1949).

The off flavor in mashed potato powder is probably due to oxidative rancidity of the potato fat. This flavor is different from that caused by "browning."

339I. Deterioration of dried fruits.

HAAS, V. A., AND STADTMAN, E. R. *Ind. and Eng. Chem., 41,* 983-5 (1949).

Ion exchange resins have been used to separate apricot concentrates into three fractions of distinctly different composition: a cation fraction containing 81% of the nitrogenous constituents and all of the inorganic cations, a neutral fraction containing 98% of the sugars, and an anion fraction containing 88% of the acids other than amino acids and acidic proteins. The browning of apricot concentrate was compared with the browning of the individual fractions and with combinations of these fractions. These experiments indicate that browning is the result of at least four types of reactions; between the nitrogenous constituents and the sugars, between the nitrogenous constituents and organic acids, between sugars and organic acids, and reactions involving only organic acids.

POULTRY AND EGGS

340I. Vitamin and amino acid content of processed chicken meat products.

MILLARES, R., AND FELLERS, C. R. *Food Res., 14,* 131-43 (1949).

Studies on the effect of processing on the thiamin, riboflavin, and nicotinic acid content of chicken meat indicate that significant losses of thiamin occur with all methods of processing, losses being a function of both the time and temperature of the process. Curing and smoking, followed by canning, resulted in losses of thiamin which may exceed 80% of the original content of this vitamin in fresh chicken meats. Curing and smoking were also found to cause notable losses of nicotinic acid, but no appreciable loss of this vitamin resulted from other methods of processing. No significant loss of riboflavin occurred as a result of any of the processes. Little destruction of amino acids was noted to occur during commercial processing of chicken meat products, with only tryptophan showing significant losses. As much as 50% of this amino acid may be lost in the canning of chicken meat.

341I. Frozen storage of poultry. V. Effects of some processing factors on quality.

PEARCE, J. A., AND LAVERS, C. G. *Canadian J. Res., 27F,* 253-65 (1949).

Examination of a number of phases of poultry processing showed that birds of optimum quality were obtained by: using a 90 second bleeding time; dipping in a semi-scald tank for 40 seconds at 128° F.; operating both shafts of the rough-plucker

at the same speeds; operating the rough-plucker at conditions such that the rubber fingers did not exert a force greater than 11 lb. on the carcass; and carefully training operators of hand-roughers. Splitting the carcasses up the back, eviscerating, and packing flat reduced the space required for packing to less than 50% of that required by present methods, and still permitted reassembly of the bird into a presentable form for roasting. An impact dynamometer was useful in detecting unfrozen spots in the birds. Injecting various solutions into the carcass before freezing, and measuring the drip from the defrosted muscle, showed that maintaining the proper ratio of salts and water in the muscle reduced drip. Bleeding time had no effect on development of off-odors in stored poultry but evisceration before storage markedly reduced development of off-odor on the eviscerated surface and in the thigh meat. Coating eviscerated birds before freezing with carrageenin gel containing 6% NaCl delayed development of off-odor on eviscerated surfaces of defrosted carcasses.

342I. Preparing and storing frozen eggs.

WINTER, A. R. *Ice and Refrig., 116,* 64, June, 1949.

Quality in frozen liquid egg products is determined largely by bacterial content, which in turn is affected by (a) cleanliness and soundness of original eggs, (b) sanitation and speed of handling into freezers in breaking plants, and (c) methods of freezing and storage. When liquid egg products arrive at freezing plants or at storage plants, after freezing, they may be already sufficiently contaminated so that the best practices cannot protect them fully. Freezing must be fast and thorough and should follow quickly after eggs are broken out. There is no sure way of knowing whether various lots will tolerate small or large deviations from best freezing and storage practices. Keep freezing temperature at 0° F. or below, preferably with forced air movement. Store at 0° F. or below.

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343I. Studies on preservation of shell eggs by coating with plastics.

YUSHOK, W. D., AND ROMANOFF, A. L. *Food Res., 14,* 113--22 (1949).

Newly laid eggs coated with films of chlorinated rubber, polystyrene, or polyvinyl acetate lose substantially less CO_2 and water during storage than untreated eggs. Ability of chlorinated rubber and polystyrene to preserve fresh eggs is improved by inclusion of either dibutyl phthalate or n-butyl stearate in the plastic solutions. The preservative value of these plasticized resins is somewhat increased by small amounts of petrolatum and microcryst. wax. Inclusion of cetyl pyridinium chloride, an effective inhibitor of mold growth, does not decrease the sealing ability of plastic coatings. Plastic films, which are non-toxic, tasteless, and odorless, can be formed on eggs by a simple dipping or spraying method, without the use of elaborate equipment. Cost of the plastic material and modifiers is not prohibitive for practical use.

TASTE TESTING

344I. Organoleptic tests in the food industry. III. Some statistical considerations in organoleptic tests.

WOOD, E. C. *J. Soc. Chem. Ind., 68,* 128-31 (1949).

The principles underlying the correct interpretation of the judgments of Tasting Panels are discussed with special reference to the use of an analysis of variance. Certain assumptions inherent in present methods for assigning palatability scores are examined critically. There is some risk of erroneous conclusions when a series of scores, each for one desirable quality, is to be combined to obtain a single score for general palatability; suggestions are made for improving the correlation between such scores and consumers' actual verdicts.

345I. Genetical differences in taste sensitivity to phenylthiourea and to anti-thyroid substances.

HARRIS, H., AND KALMUS, H. *Nature, 163,* 878-9 (1949).

There is a high correlation between taste sensitivity for phenylthiourea, symmetrical diphenylthiourea, thiourea, thioglyoxaline and thiouracil. There was no such correlation between sensitivity to these substances and to urea, phenylurea and uracil. Thus, substances so far tested, to which the genetically distinct types of individuals respond differently, all contain the grouping $=N-\overset{\overset{\|}{S}}{C}-$

GRADUATE FOOD COURSES AT I. I. T.

The Graduate School of the Illinois Institute of Technology is presenting two lecture courses of interest to Food Technologists, starting September 21, 1949 and continuing through January 25, 1950. Sixteen lectures are scheduled in each course.

A course in Food Acceptability Technics, directed by Colonel Rohland A. Isker, is designed to provide the student with (1) a working understanding of the methods used in evaluating public acceptance of food products, (2) a review of industrial practices in evaluating commercial indices, and (3) an appreciation of steps being taken to put theory into practice. The list of lecturers includes the most outstanding names of the country on the subject of organoleptic grading of foods.

A course on Food Regulation and Compliance is directed by Albert I. Kegan, Counselor at Law and Lecturer in Patents and Copyrights, Northwestern University. The lectures include subjects on patents as well as on food standards and regulation.

Food Technology Traffic Rules

After brief reflection it is easy to agree with the conclusion that, taking one consideration with another, an editor's lot, like a policeman's, is not a happy one. An editor is indeed a kind of literary traffic cop who not only enforces decisions but is often called upon to make them. One can hardly blame him, therefore, for soliciting the advice of a cabinet of associate editors to guide him in formulating editorial policy.

The IFT is composed of members representing many phases of professional and technological interest, from the purely academic to the frankly commercial. As the official organ of the Institute, FOOD TECHNOLOGY must satisfy the needs of its members. What shall be the guiding philosophy in setting the standards for publication? It would seem logical that this philosophy should reflect the fundamental aim of the Institute to advance and achieve recognition for food technology as a profession. Thus original papers on scientific or technological topics should be required to be new and significant. Obvious or subtle ax-grinding should be directed to advertising or to publications in which there is no question as to the propriety of such practice.

The use of trade names for products identifiable by their description or by their "common or usual" names is unseemly in a professional publication except in rare cases when it is essential for accuracy of presentation or to facilitate duplication of an experiment; in no case should trade names be used when comparing competitive products for merit or for the exploitation of one of several competitive products. The use of such statements as "Patent Pending" which may confer commercial advantage but which are difficult to verify independently sometimes poses a ticklish question of editorial policy. The professional journal must avoid such a reference except in the unusual case in which the reference is necessary to clarify a scientific or a technical point.

Most publications disavow responsibility for the statements and opinions of their contributors, but this policy evades the issue of competitive advantage.

Editorial policies are not easy to enforce. Many members of IFT are employed by companies who expect them to participate in the technical promotion of their products. Perhaps it should be more difficult than it is to obtain time on a meeting program for the presentation of promotional papers, but it certainly should not follow that such contributors necessarily merit space in a scientific publication. It is the Editor's job to decide where to draw the line—and an unenviable one it is, for good policy is not always good politics.

As the window dressing for the IFT, the pages of this publication should display high quality of content, attractively presented. It is devoutly to be wished that all papers published in FOOD TECHNOLOGY be characterized by accuracy, originality, clarity, vitality, essentiality and brevity. Too often, however, scientists and technologists in our laboratories and plants whose work merits publication lack the facility for describing their accomplishments in a manner fitting these characteristics.

It is the Editor's unhappy lot to balance such elements as content against style; novelty against self-aggrandizement; prolixity against authorship. As one seated on the pedestal of the throne of responsibility, I can say for our Editor, "It's a tough job, but you, dear writer, can help make it easier."

B. L. OSER.

Notes and Letters

Letter to the Editor

Several months ago, J. C. Ayres reported "A Procedure for the Quantitative Estimation of Salmonella in Dried Egg Products" (FOOD TECHNOLOGY, May, 1949, pp. 172-176). In this paper he intimates that the method used by us to estimate these organisms (*Canadian Journal of Research*, F22: 46-63, 1944: Ibid. F25:291-298, 1947; *Poultry Science*, 25:115-117, 1946) is quite complicated, whereas it is actually much simpler than the one he proposes. I believe the difficulty was that he has included in the method some remarks on differentiating Salmonella colonies on the plates from various contaminants found in egg products which we had not intended to be included in the quantitative method itself. Perhaps our original paper was not too clear on this point and to prevent further confusion it is hoped you will be able to publish the following details:

The method used as a routine procedure in these laboratories is as follows: 13 gm. of egg powder is ground with 117 ml. of tetrathionate broth in a sterile mortar with a small amount of sand or mixed in a sterile screw-capped aluminum Waring blendor jar. This gives a sufficient quantity of a 1-10 dilution for ten tubes each of 10.0, 1.0 and 0.1 ml. amounts of the inoculated broth (1.0, 0.1 and 0.01 gm. of powder). Two or three ml. of tetrathionate broth is added to tubes containing the 0.1 ml. amounts to prevent drying. After 24 hr. incubation at 37° C. the tubes are streaked on SS or bismuth sulphite agar plates, usually two tubes to a plate, and the plates are incubated overnight at 37° C. Typical colonies are then checked with O-sera by the slide agglutination method. From the number of tubes positive for Salmonella the most probable number per gram of powder can be determined by the published tables. Using the dilutions suggested covers the range from less than one to 180 organisms per gram.

In our experience the majority of the Salmonella in egg powder are in Groups C and B. We have therefore found that by checking with sera 04, 02, 05 and 06 in that order we were able to group most of the organisms with the greatest economy of sera and time.

(Notes and Letters continued on page 16 following technical papers)

Industrial and Legal Viewpoints

Introduce Your Engineer to a Food Technologist[a]

E. E. SMITH

Plant Engineer, Valley Date Gardens, Indio, California

The problem of combining sanitary control with operating efficiency in small plants is discussed. The sanitizing of belt conveyors in dried fruit handling is cited as an illustration of the importance for effective cooperation of food technologists with practical production engineers.

This is a paper designed to approach some of the engineering and sanitation problems of smaller food processing plants which, because of their highly specialized product and limited volumes, do not enjoy the same attention from machinery manufacturers as those which are engaged in the manufacture of more staple articles. The limited possibility for sales of machinery and equipment to smaller processors naturally means that the large machinery plants cannot be depended upon to furnish all necessary equipment. Standard type machines must be revised to meet special problems and in the majority of cases, the engineer must use his ingenuity in building equipment which meets the requirements of his product. As a consequence, it is not unusual to find that the sanitation angle is overlooked in the quest for cheaper means of expediting the product through the plant.

In larger, more standard operations, machinery and equipment manufacturers are able to design more or less standard machinery and the volume is such that they are able to employ technical men who can explore all angles of efficiency in a machine before it is in the production stage. This, unfortunately, is not true in the smaller industries, and too often the trial and error method must be used. This does not always produce the best "under the surface" results. As a result, it is found that a great deal of good thought and planning has gone into the equipment but that one item which has been overlooked in the construction is the sanitation problem.

It has been generally accepted that a reduction of the microbiological population on food processing machinery and equipment must command ever increasing attention in the development of new methods and processes for handling and packaging of non-sterilized food products. It is a matter of record that, rather than reducing these organisms, handling of dried foods to the ultimate packaging of the product, tends to build them up. This increase of micro-organisms is aggravated by the use of conveyor belts and equipment on which there is a continual build-up of syrups and other debris and by physical handling of the product without sufficient attention to sanitation of the hands. Lug boxes, trays, and sweat boxes also tend to aggravate this condition unless adequate cleaning is undertaken.

The engineering problem in the food plant thus becomes two-fold.

First, how to adapt the present equipment to this new program without costly replacement of otherwise satisfactory operation.

Second, to plan a program which will take into consideration microbiological build up, and so design any future machinery and equipment that ease of cleaning as well as continuous sanitization may be effected, insofar as possible.

Not too long ago a conveyor was merely what the name implies; a method of moving a product from one operation to another, or of providing a space where inspection and grading could be accomplished while the product moved from one point to another.

In recent years, it has been found necessary to go far beyond this point in the building of food plant equipment and machinery. The old-time practical engineer, through no fault of his own, has not been conscious of the importance of plant sanitation and cleanliness. He has had little concept of the bacterial build-up on what otherwise were very good conveying and inspection belts. In fact, the natural reaction has been one of extreme impatience and distrust of the food chemist who had the temerity to suggest that his equipment was lacking in one of the most important details so needed in the modern plant, that of sanitation. His first duty was to provide a cheaper and faster means of moving his product through the plant. This he accomplished by the use of Head and Tail Roll lightly held together by a piece of angle iron on each side, which supported the bearings. This he mounted on other angles to provide the proper heighth from the floor, thus providing a cheaper and faster way of moving his product through the plant.

The above mentioned two rollers and endless belt system was by its very nature of simplicity at least accessible in most part. Shortly thereafter, he is confronted by the safety engineer who can show that unless the major "nip points"are covered he will have a very unsafe piece of machinery which will endanger life and limb. It becomes necessary for him to add guards to eliminate danger points and soon he has a belt which is inaccessible for cleaning except on exposed surfaces. As a result, there are a series of idler rollers and slip points bounded on each side by side rails wide enough to hide all said rollers, plus a head roll at one end and a tail roll at the other, producing a beautiful incubator which cannot be cleaned untii the belt is removed. Of course, with the addition of a few chain guards and other necessary material we have, at least, been able to satisfy the safety engineer. But it is a nice piece of equipment and the engineer is justly proud of his handiwork.

[a] Presented before the Ninth Annual I. F. T. Convention, San Francisco, Calif., July 14, 1949.

Perhaps he was not aware of the bacteriological growth that took place in these inaccessible places, and until he is made aware of the importance of doing something about it, he cannot be blamed too much for his lack of interest in the subject.

This is the time he should be introduced to the food chemist. It is important that this acquaintanceship be one of mutual trust and confidence in order to produce practical equipment which will meet the standards of the various inspectors who must be satisfied with its cleanliness, as well as those who rule on its safety.

Now, admittedly, in too many cases, we have built a grading belt, or conveyor, which meets the requirements of the safety code. We also, as above mentioned, have a built-in bacterial incubator. What can be done with it?

1. Depend on a thorough cleaning after each shift, which is good but does not prevent a heavy build up during the operational day.

2. Use of intermittent wiping with chlorine treated cloths, which if carried on at regular intervals, is very effective, but requires that the belt be put out of operation during the wiping periods.

3. Use of continuous washers and sterilizers which keeps the belts free from excessive loads of food debris and micro-organisms throughout the period of operation and materially assists in the clean-up at the end of the day.

There are two general types of continuous sterilizers in use in our plant.

1. The immersion type.

2. The revolving brush washer.

The immersion type sterilizer consists of a pan a few inches longer than the width of the belt in use and slightly wider than the diameter of the tail roller. There is a hugger roll just forward of the tail roll which keeps the belt travel high around the tail roll, thus allowing for submergence in the rectangular pan. A squeegee is placed in sharp contact with the belt moving over the tail roll. The pan is supported by a simple set of hinged brackets with knock out braces which allows the pan to be removed for cleaning.

The revolving brush washer consists of a brush, the width of the belt, which is mounted on bearings secured to the conveyor frame in such a manner as to bring the brush into sharp contact with the surface of the belt. Immediately following the brush, a squeegee is placed in such a manner as to wipe the moisture from the belt and to allow it to run back into the same pan in which the brush is revolving in contact with the solution. It is necessary to arrange a motor drive or a series of gears or sprockets and chains to drive the brush so that it revolves in the opposite direction of the belt travel.

The first, or immersion type, has several advantages over the brush washer.

The cost of power, additional equipment and design becomes a factor, for the brush washer requires a motor or other drive to control the revolutions of the brush. Upkeep and depreciation are other factors which do not favor the brush type washer.

In comparison, the design, construction, upkeep and depreciation of the immersion type washer are most simple.

Another advantage which is related directly to sanitation strongly favors the immersion type of belt washer. It is almost impossible to keep the revolving brush clean and free from contaminating food debris and micro-organisms. Obviously, such a condition then completely nullifies any desirable effect which otherwise might be obtained.

An advantage of the immersion type washer which may be discounted by some is that it can be operated with a small amount of water, treated in any manner without requiring expensive dispensing apparatus. This is a distinct advantage for the smaller food plants and not without merit even for the larger plants where water consumption and disposal problems are acute.

In operation, the required treatment of the water and the frequency of change have been observed to depend upon the purpose which the belt washer must accomplish. If the sole requirement is that the belt be clean and free from unsightly accumulations of food debris and other foreign matter, fresh water or, at most, a detergent treatment of the water is all that is required. If, however, the belt must be kept relatively free from micro-organisms, as is the case in most instances, a sanitizing agent must be used. (See Reference).

In practice it has been found that in a great many cases, especially when handling syrupy or sticky material, it is possible to manipulate the material by shears or other devices in such a manner that dividing of flow becomes much simpler on a continually washed belt than on one which is cleaned by any other method. This, in many cases may have a decided economical advantage for the operator, which will more than offset any mechanical objections to the installation.

In planning for building of new grading belts, washers, sterilizers, packaging lines, etc., primary consideration should be given to the dollar value to be returned by the use of the equipment but we should not lose sight of the possibility of the clean up time using up the greater portion of dollars saved. I recently observed a machine designed for one man operation, but practice proved that the take down and cleaning operation required as much time as the average operating day. This was primarily because of the placing of one vital part which would not permit the use of steam or water wash down without dismantling. This problem will be overcome and no doubt the clean up time will be very materially lessened, thus making the machine practical from an operational standpoint.

It would seem advisable to construct conveyors, grading equipment, and washers, wherever practicable, in such a manner as to provide a definite opening between the food contact surface of the belt and the return so that they can be readily steamed or washed on both sides without the necessity of removing and replacing the belts. This also makes possible the cleaning of auxiliary rollers, idlers and side rails. This is not always possible because of the problem of maintaining knee room for operators and graders, but has proven practical in a large number of operations. It is often possible to use the return section of the belt as a means of trans-

porting or assembling culls, pits or other by-products to a central point, thus saving the cost of another belt as well as saving space.

These are the observations of conditions which are prevalent in smaller food plants where the product is highly specialized and where the engineering is often done by practical men. An industry which has sprung from the small farm packing houses and is still experiencing growing pains on the road to becoming a grown up industry, and a few correcting procedures which we are using to overcome some of our handicaps.

LITERATURE CITED

1. Vaughn, Reese H., Winter, Frank, and Smith, Edward E. Continuous sanitizing of equipment in the dried fruit industry. *Food Technol.*, 2, 292 (1948).

ABSTRACTS OF VITAMIN LITERATURE

To the Editor's desk has come a copy of Volume II, No. 4 of "Abstracts of Vitamin Literature," a quarterly publication of the Association of Vitamin Chemists, Inc. This publication, after two years of operation primarily for members of the Association, is now being offered for general distribution. The issue mentioned above contains 30 mimeographed pages of Abstracts covering a broad field of vitamin literature. Fifty-seven Journals are regularly abstracted. The publication is issued in October, January, April, and July. The annual subscription rate is $3.00. Subscriptions are received by Mr. Irwin Olcott, Dawe's Vitamin Oil Products, 4800 South Richmond, Chicago 32, Illinois.

AMERICAN SOCIETY OF REFRIGERATING ENGINEERS

An extensive list of technical papers and three engineering conferences on specialized problems of the refrigeration industry are expected to produce a record turn out for the 45th Annual Meeting of the American Society of Refrigerating Engineers at Chicago's Edgewater Beach Hotel December 4 to 7.

The inclusion of the three conferences in addition to the regular four technical sessions at the ASRE meeting will provide one of the most diversified and popular programs in many years. These conferences are (1) the household refrigerator conference at which the use of plastics will be discussed; (2) a water re-use symposium concentrating on means for conserving water used in refrigeration and air conditioning; and (3) a conference on the design and applicability in multi-room buildings of room air conditioners.

In each of these conferences, a paper on the general subject will be read by an outstanding authority in the field and then leaders from many refrigeration firms will be asked to discuss the salient points brought up in the paper.

Twelve technical papers will be given at four plenary sessions of the Society.

Two meetings of the Society's governing council are scheduled as well as many meetings of technical committees now at work on new and revised codes and standards for rating and testing refrigeration equipment.

Book Review

Practical Canning, by Arthur Lock. Food Trade Press, Ltd., London, 1949, 246 pages. 40 shillings ($5.60).

Although writing for the British reader, the author has drawn upon an acquaintance with canning practice in the United States, which he has generally interpreted quite soundly. Nevertheless, the American reader is apt to conclude that the book was written for someone else; some of it deals with products or styles of pack unfamiliar to him, and in many places it suffers from the brevity of treatment inevitable in covering so large a subject in so small a space. For example, the canning of pineapple occupies but a page and a half. Some few products, notably peas and beans, are given a little more space.

Attention is limited to canned fruit and vegetable products; meats, fish, milk and specialties are not included, unless jams, applesauce and beans with pork are regarded as specialties. Of the thirteen chapters, six are devoted to subjects of general application, such as starting a cannery, organization of operations, can sealing, sirup making, retort operation, etc. The remainder cover fruit and vegetable canning, manufacture of fruit pulp (sulfured for jam making), jam canning, and glass packing ("bottling") of fruit. The section on jam is nebulous as to formulation; much more detailed information would be required in order to operate in compliance with the standards of identity in effect in this country. Fruit bottling is treated briefly, the author indicating that glass packing has thus far had limited adoption by British firms. Only three lines of text are devoted to the retorting of glass containers with supplementary air pressure.

In his Introduction the author shows himself aware of the difficulties of describing an industry in which practices vary so widely from one plant to another. A more serious difficulty arises from the changes that occur with time; one can never catch up fast enough to get into type. In Chapter XII, for example, the steam exhausting of vegetables before closure is stressed, even for peas which in this country are generally closed without exhaust. Yet there has been a marked trend toward vacuum and steam-flow closures in recent years, specifically to eliminate the space-wasting exhaust boxes recommended here. It is perhaps no reflection on books of this type to say that no canner could afford to place sole reliance on them, but must constantly seek the latest information from trade publications, fellow canners, machinery and supply manufacturers, and in fact from every available source.

Within the severe limitations of space the author has acquitted himself well, arranging his material logically and expressing it clearly. A few errors or ambiguities were found, as on page 23, where the heights of No. 2 and No. 10 cans were given $\frac{1}{16}$ inch too short. The book is printed on good paper, showing to advantage the 52 well-chosen illustrations of British canning equipment, and has an index.

C. A. Greenleaf.

News of the Institute

PRESCOTT AND STATELER TO WRITE IFT HISTORY

Dr. Samuel C. Prescott, emeritus professor and former Dean of Science of Massachusetts Institute of Technology as well as the first president of the Institute of Food Technologists, is presently engaged in writing a history of the IFT. He is being assisted in this work by Mr. E. S. Stateler, associate editor of *Food Industries* and a past chairman of the Chicago Section of IFT.

Dr. Prescott, generally recognized as the "father of food technology," was responsible for the first Food Technology Conference held at MIT in 1937. This conference, coming 15 years after "Boston Tech" first offered a course in food technology under his leadership, provided the nucleus of food experts who founded the Institute of Food Technologists in another meeting at MIT in 1939.

Preliminary to this meeting was a meeting of a small group of food technologists at the New York Agricultural Experiment Station in Geneva, called by Dr. George J. Hucker, and a second meeting of the same group in New York City, at which committees were chosen to implement the organization activities. The first annual conference of the Institute was held in Chicago in 1940.

Dr. Prescott will outline the factors and forces that led to the realization of his dream for recognition of food technology as a profession. The ever increasing reliance of the world's oldest and largest business—the processing, handling, and distribution of food—upon science and its applications has been emphasized and firmly established by the nation's experiences in the two World Wars of the 20th Century, not to mention the general public's preferences for processed and prepared foods.

The Chicago Section of the Institute established the Nicholas Appert Medal Award for presentation to outstanding food technologists — which award was conferred upon Dr. Prescott in 1943 as its second recipient. In its desire to commemorate the tenth annual IFT conference, the officers and executive committee of this first chartered regional section decided that a history of the Institute would prove a fitting tribute to its rapid growth from a membership of approximately 700 to nearly 3000 in its first ten years of existence, and especially so, under the authorship of IFT's official "father," Dr. Prescott.

Mr. Stateler, who was one of the founders of the Chicago Section, has long been a staunch advocate and loyal supporter of the Institute as evidenced by his many services to the national society as chairman of most of its important standing committees.

Thus Prescott and Stateler have been commissioned to prepare an authentic record of the Institute of Food Technologists and its Chicago Section to be published in a brochure for presentation to all who attend the IFT Decennial Conference to be held in Chicago in May, 1950.

EDITORIAL BOARD MEETING

At a meeting of the Editorial Board of FOOD TECHNOLOGY held in San Francisco, California, on July 10, 1949, decisions were made that will be of interest to I. F. T. members in general. In the absence of the editor, Dr. B. E. Proctor presided.

A Committee of Associate Editors was appointed to prepare a statement of policy in regard to the subsidizing of the publication of manuscripts, and to investigate the cost of such subsidizing. This committee consists of: W. H. Cathcart (New York), E. M. Mrak (California), and P. C. Wilbur (California).

The policy under which FOOD TECHNOLOGY operates concerning sequence of publications is to publish papers in the order in which they are accepted and not necessarily in the order in which they are received. The order of receipt of papers is followed insofar as possible, but the time elapsing before acceptance varies so widely that it is impossible to publish the papers strictly in order of their receipt. It was decided that the date of the initial receipt of a paper be published with the paper.

On December 31, 1949, the Editorial Board will, with regret, bid au revoir to six of the present Associate Editors and on January 1, 1950, will welcome six new Associate Editors. At the July meeting of the Editorial Board, the names of all Associate Editors were placed in gelatine capsules in a cup, and six capsules were then drawn from the cup. The following names were drawn for those whose tenure of office ends in 1949:

W. H. Cathcart
H. C. Diehl
L. S. McClung
E. M. Mrak
B. E. Proctor
P. C. Wilbur

A further drawing was then made, to determine by lot those whose tenure of office would end in 1950. The following names were drawn:

H. W. Dorn
C. N. Frey
W. H. Goss
H. A. Schuette
P. F. Sharp
H. W. von Loesecke

It was decided to form immediately an Editorial Policy Committee consisting of nine Associate Editors and the Editor-in-Chief. The nine Associate Editors will consist of three of the six whose tenure of office ends in 1949, three of the six whose tenure ends in 1950, and three of the six whose tenure ends in 1951. On January 1, 1950, three of the six newly appointed Associate Editors will also be appointed to the Committee on Editorial Policy.

Efforts are to be made to group the papers published in any one issue of FOOD TECHNOLOGY to give diversification, so that not too many papers on the same subject will be printed in one issue.

The Editor and the Executive Committee of the Council were authorized to review a suggested method of reducing publication costs by presenting the News of

the Institute and Book Reviews in a separate mimeographed publication. It was suggested that consideration be given to the format of the first two pages of FOOD TECHNOLOGY, for the purpose of conserving space. For example, it is believed unnecessary to list all officers of the Institute in every issue of the journal. Once or twice a year might suffice.

It was decided that the abstracts are an important part of FOOD TECHNOLOGY, because many receive this publication who do not receive CHEMICAL ABSTRACTS. Hence it was recommended that the abstracts be continued. It was not deemed practical, however, to publish the abstracts so that they could be cut out and filed.

It was decided that if charts have to be redrawn, this should be done at the author's expense and not at the expense of FOOD TECHNOLOGY.

A telegram was sent to the Editor, Dr. C. Olin Ball, who was unable to be present at the meeting. This telegram expressed the pleasure and appreciation of the Associate Editors of working with Dr. Ball and congratulated him on his splendid accomplishment in raising FOOD TECHNOLOGY to its present high standing in the field of food technology.

ANNOUNCEMENT OF 1950 I. F. T. PROGRAM COMMITTEE

The Program Committee for the 1950 I. F. T. Conference to be held at the Edgewater Beach Hotel in Chicago, May, 1950, has been organized. The Committee is composed of the following members:

Lloyd A Hall, National Program Chairman
Vice Chairmen:
Industrial and Production Section—John H. Nair, Ray Wakefield.
Research Section—George F. Stewart, Louis B. Howard.
Symposia—Emil M. Mrak, Bernard L. Oser.

A preliminary meeting of the National Program Committee was held at Atlantic City during the A.C.S. Convention on September 19. At this meeting, Dr. Fellers, National President of I. F. T. was present, as was Dr. Clifcorn, Chairman of the Exhibits Committee.

Any members who wish to submit papers for the 1950 Conference are requested to advise immediately the National Program Chairman or a member of the Program Committee.

COUNCIL MEETING, INSTITUTE OF FOOD TECHNOLOGISTS

July 9, 1949, Palace Hotel, San Francisco

Thirty-nine Councilors signed the register. The meeting was called to order at 9:30 A.M. by President H. C. Diehl.

Several actions previously recommended by the Executive Committee on May 15, 1949, were approved. The main items in connection with FOOD TECHNOLOGY are:

1. The Editorial Board shall consist of nine (9) members plus the Editor. Three (3) of the nine (9) members shall be rotated each year, giving a 3-year term.

2. The Editor is urged to make full use of the Editorial Board to function effectively on all matters of debatable editorial policy and in the general conduct of all editorial functions.

3. The personnel of the Editorial Board shall be approved annually by the Council or by its Executive Committee.

4. The Publications Committee is concerned with the business management of FOOD TECHNOLOGY, including final approval of all advertising.

5. Efforts will be made to conserve the space used for editorials, book reviews and regional section news in order to provide additional space for contributed papers.

6. Papers given at Annual Conferences shall be available first of all to the Editor of FOOD TECHNOLOGY who shall promptly decide which are suitable for the Journal. Others shall be released promptly to the authors.

7. The subject matter of Annual Conference papers may be rewritten for other publication objectives and printed in other journals provided prior notice is given by the author to the Editor of FOOD TECHNOLOGY. The Editor has the right to release such papers.

8. It is not the policy of the National Institute to claim publication rights for papers presented before Regional Sections. The latter are free to make their own rules on this matter.

9. The contracts with Harley Ward as Advertising Manager and with Garrard Press for printing of the Journal were approved for not more than one year from July 1, 1949.

10. The printing of 3200 copies of the journal beginning with July 1949 issue was approved.

Other recommendations made by the Executive Committee were approved as follows:

1. Each Regional Section will determine the Councilors who will represent it at Council meetings. Councilors-at-large hold office concurrently with officers, but for a 2-year term.

2. An Institute Employment Committee was authorized with a representative from each Regional Section.

3. Authorization was not given to publishing the revised Constitution in FOOD TECHNOLOGY. Mimeographed copies will be supplied for the present.

4. Student membership annual dues shall be $2.50.

5. The questionnaire for the I. F. T. Membership which was prepared by the Committee on Liaison with the Armed Forces was approved.

Voted that Proceedings of the Annual Conference be no longer published.

The reports of the Secretary-Treasurer and President were accepted. Highlights of the Secretary's report were that present membership numbers 2905 with 242 nonmember subscribers to FOOD TECHNOLOGY. A new directory was prepared and mailed to the membership in May 1949. The balance of funds on hand June 30, 1949 was $20,675.00 plus a $1000 U. S. Government Bond. Estimated expenses for the period July 1-December 31, 1949 are $12,550 with estimated income at $6,225.00 exclusive of possible increased income from advertising and from Annual Conference receipts. The financial standing of the Institute is sound but the greatest care is recommended in keeping down expenses.

Voted that all National Committee Reports be duplicated 15 days in advance of the Annual Conference so that copies shall be available to Councilors before the Annual Meeting. Committee Chairmen are responsible for duplicating their reports or mailing them to the Executive Secretary's office in time for him to duplicate them and mail to Councilors.

Report of the Finance and Budget Committee was approved. The budget estimate for FOOD TECHNOLOGY is $16,080; Secretary's office $10,500 and President's Office $800. Estimated income is $29,400 not including profit from the Annual Conference in San Francisco. Members dues are estimated to net about $20,000.

The Committee on Constitution reported that all recommended revisions in the Constitution had been voted by the membership. The Constitution is available in mimeo form. Copies may be had from the Executive Secretary. It was voted not to print the revised Constitution in FOOD TECHNOLOGY. The Committee felt that the Constitution should be further liberalized and freely interpreted. Changes in By-laws would be preferable in the future rather than further revision of the Constitution. The report was accepted and the next committee on Constitution was instructed to implement the recommendations made in the present report.

The reports of Committees on Publicity, Nominations, National Conference, Program, Insignia and Membership Certificate, and Qualifications were accepted with thanks. The Committee on Insignia and Membership Certificate was discharged. The Committee on Membership is preparing a descriptive brochure on the Institute.

Allocation of funds for various committees was discussed and it was voted to refer to the Executive Committee.

The report of the Committee on Education and Curriculum was approved. This committee proposes to distribute a questionnaire to the food industries (I. F. T. and non-members) together with an explanatory covering letter.

The Report of the Committee for Liaison with the Armed Forces together with the attached questionnaire was approved. Request for an MOS number (military occupational specialty) for food technologists in the Army was disapproved by Army Authorities.

The Council voted that all National Committee Chairmen furnish succeeding Chairmen with old Committee Reports and files.

The Report of the Committee on Regional Sections was approved. The Council recommended that meetings for Section and Club officers be made an annual event at the Annual Conference. The purpose of such a meeting is to strengthen the organizational structure of local sections by round table discussions of problems and how they have been solved in local areas. (Note: The Breakfast held on July 10 was most successful and stimulating and it was voted to hold another meeting at Chicago in 1950). The Council directed the new Committee to study boundaries of existing Regional Sections.

Dr. Fred C. Blanck, Liaison Representative of the I. F. T. on the Food and Nutrition Board of the National Research Council, is a member of the Food Protection Committee which deals with nutritional and public health aspects of the addition of chemicals to foods. A permanent Committee on this subject is being set up by the Food and Nutrition Board of the NRC. Dr. Blanck's report was approved.

The Council approved the report of the Committee on Student Membership with the exception that dues for student membership were set at $2.50 per year. This includes receipt of FOOD TECHNOLOGY and the right to register at the Annual Conference for a fee of $1.00. Student Chapters may now be activated at various Universities by complying with the newly revised Section of the Constitution dealing with Student Memberships.

President Diehl reported briefly on the work of several technical committees of the Institute. These are Pectin Standards; Chemicals in Foods; Procedure and Nomenclature in Taste Testing; Frozen Foods; and Microbiology of Citrus Products. It was the general feeling of the Council that such technical committees should be sponsored and encouraged.

President Diehl reported that the I. F. T. had been accepted by the AAAS as an Affiliated Society, and is now entitled to appoint two Councilors to the AAAS. It was voted that the incoming President appoint two Councilors (which may include the President) to represent the Institute at the AAAS.

The Editor's report was read and accepted except for the matter of a budget which was referred to the Budget Committee.

It was voted that the name of the Iowa Regional Section be changed to Ames Regional Section. This was done at the request of the Section itself.

It was voted to accept the petitions of the Ohio Valley and Oregon for new Regional Sections.

Col. Charles S. Lawrence was appointed by the Council to serve as Executive Secretary and Business Manager of the Institute for the period October 1, 1949 to December 31, 1950 at an annual salary of $4800. The address of the Executive Secretary is 222 West Adams Street, Chicago 6, Illinois.

Garrard Press was continued as publisher of FOOD TECHNOLOGY for one year, i.e. June 30, 1950. Similarly C. O. Ball was reappointed Editor of FOOD TECHNOLOGY for the same period. Harley Ward was reappointed Advertising Manager for FOOD TECHNOLOGY, the year ending June 30, 1950. It was the feeling of the Council that the Publications Committee should make recommendations to the Council regarding appointments of the Editor, Editorial Board, Advertising Manager and Publisher, in the future (no motion).

Philip K. Bates was duly elected Secretary-Treasurer of the Institute for one year.

The matter of incorporation and/or other means of protecting the Institute, the Executive Secretary and membership, was referred to the Executive Committee.

The matter of depositaries for funds of the Institute was referred to the Executive Committee.

It was voted that President Fellers carry on the duties of Secretary-Treasurer, pro tem until such time as the office of the Executive Secretary could be set up in Chicago.

The Executive Committe was directed to study the matter of continuity of exhibits at Annual Meetings. How do exhibits affect the value and financial aspects of Annual Conferences? An attempt should be made to define a long-term policy concerning the scientific program and exhibits. Should advertisers in FOOD TECHNOLOGY be given preference in selling exhibit space?

Charles Smith of Chicago reported briefly on the Annual Conference to be held on May 21-26, 1950 at the Edgewater Beach Hotel, Chicago, Illinois. Space is available for about 45 exhibits compared with 100 at San Francisco.

Stephen Galvin of New York stated that the 1951 Conference would be held at the Hotel New Yorker in New York City during the third week of June 1951.

Ray Wakefield of Michigan formally invited the Institute to hold its Annual Conference in the Great Lakes area, probably at Mackinac Island, in June 1952. The Council voted to accept the invitation.

The matter of sustaining memberships in the Institute was discussed and finally referred to the Executive Committee for later action.

It was voted to mail a copy of the Constitution to each new member of the Institute.

Voted to accept Australian and Scandinavian (or Swedish) petition for affiliation with the I. F. T. on the same basis as Regional Sections in the U. S. or Canada, and described in the Constitution. However, these two Regional Sections are accepted on the basis of their present membership in the hope that new members will be attracted to them.

On a show of hands the vote was evenly divided as to whether one National Councilor should represent 100 or 200 members in Regional Sections containing more than 100 members. No action was taken by the Council.

It was voted that at least ten (10) eligible councilors for the Executive Committe of 5 members, exclusive of Institute officers, be nominated by a nominating Committee, and elected by mail ballot. (Note: President-Elect Paul Sharp was selected as Chairman of the Nominating Committee and the election was duly carried out.) President Fellers appointed Lloyd Hall and Milton E. Parker both of Chicago, Program and Publicity directors, respectively.

Meeting adjourned 5:30 P. M.

CARL R. FELLERS
Secretary-Treasurer

INSTITUTE OF FOOD TECHNOLOGISTS ANNUAL GENERAL BUSINESS MEETING

Hotel Whitcomb, San Francisco
July 12, 1949, 12:45 P. M.

PRESIDENT H. C. DIEHL, Presiding

President H. C. Diehl reviewed the accomplishments of the Institute during the past year. He introduced Dr. Carl R. Fellers, the newly elected President, Dr. Paul F. Sharp, President-Elect, Philip K. Bates, Secretary-Treasurer, and Col. Charles S. Lawrence, Executive Secretary. Various members of the local Convention Committee were also introduced. Secretary-Treasurer Fellers read the Secretary's and Treasurer's reports. Philip K. Bates, Chairman of the Finance Committee, read his report and also recommended adoption of a proposed budget. (All reports are presented in the minutes of the Council). Each newly elected officer made a short response.

President Diehl spoke briefly on the function of technical committees. He felt that for the present there should be no sub-divisions or sections in the Institute dealing with different subjects, such as frozen foods, citrus products, fisheries, etc. These groups should function as technical committees.

It was moved and seconded that the edited minutes of the Council Meeting should be published in FOOD TECHNOLOGY. The motion was adopted.

It was moved and seconded that the Committee on Chemicals in Food be authorized to contact, in the name of the Institute, Dr. Wilson of the American Medical Association with the recommendation that activities of various groups in this field be coordinated. The motion was discussed from the floor and adopted. It was also suggested from the floor (but not adopted) that the committee cooperate with the National Research Council, U. S. Food and Drug Administration and the various manufacturers of insecticides.

Meeting adjourned at 1:45 P. M. after President Diehl had thanked all members of various Institute Committees, local Convention Committee and all others for their assistance and support during the year.

CARL R. FELLERS
Secretary-Treasurer

Regional Section News

SOUTHERN CALIFORNIA SECTION

On September 14, the Southern California Section held a dinner meeting at the Rodger Young Auditorium. Mr. R. W. Majonnier of the Majonnier Corporation and Mr. C. A. Shapiro of the York Corporation presented an interesting discussion on "Heat Transfer Media and Equipment," with particular emphasis on the Majonnier Corporation's "Lo Temp" Evaporator as applied to the manufacture of frozen orange juice concentrate. Following the talks, Mr. W. C. Platt of the Damerel-Allison Company (who have a "Lo Temp" unit in operation) led an interesting discussion.

In addition to the officers listed in the July issue of FOOD TECHNOLOGY as having been elected for the 1949-1950 season, the following members have also been elected:

Alternate Section Councilor: J. Pardieck, California Vegetable Concentrates, Inc., 2067 Clarendon Ave., Huntington Park, Calif.

Executive Committee: Franklin H. Hunsicker, Continental Can Co., 3820 Union Pacific Ave., Los Angeles, Calif.; Gordon L. Merchant, Merck & Co., Inc., 1855 Industrial Street, Los Angeles, Calif.

Auditing Committee: E. W. Hawkes (Chairman), Hyland Stanford Corporation, 658 Mesquif St., Los Angeles 21, Calif.

Arrangements Committee: George Wilkenson (Chairman), G. W. Gooch Laboratory, 2580 E. 8th St., Los Angeles, Calif.

Annual Conference Committee: Harry J. Deuel (Chairman),

Department of Biochemistry, University of Southern California, Los Angeles, Calif.

Employment Committee: Roy M. Hagan (Chairman), California Consumers Corp., 230 W. Jefferson Blvd., Los Angeles 7, Calif.

Entertainment Committee: Chester W. Lindsay (Chairman), Exchange Orange Products Co., 616 E. Grove St., Ontario, Calif.

Hospitality Committee: P. James Rich (Chairman), 1105 E. Greenleaf Drive, Compton, Calif.

Intersectional Affairs Committee: James S. Lawless (Chairman), Frosted Fruit Products, 200 Center St., Los Angeles 12, Calif.

Membership Committee: George Cunningham (Chairman), Nopco Chemical Co., 3499 San Pasqual Street, Pasadena 10, Calif.

Nominating Committee: Arthur N. Prater (Chairman), Gentry Inc., 837 North Spring St., Los Angeles 12, Calif.

Publicity Committee (Co-Chairmen): J. Raymond Lindquist, Rexall Drug Co., 8480 Beverly Blvd., Los Angeles 36, Calif.; Randall G. Rice, U. S. Department of Agriculture, 263 South Chester Ave., Pasadena 5, Calif.

Program Committee: F. Leslie Hart (Chairman), U. S. Food and Drug Administration, 1401 South Hope St., Los Angeles, Calif.

Budget Committee: Margaret G. Morehouse (Chairman), Department of Biochemistry, University of Southern California, Los Angeles, Calif.

The address of the Chairman of the Southern California Section, Dr. Louis B. Rockland, is as follows: U. S. Department of Agriculture, 263 South Chester Ave., Pasadena 5, Calif.

Dr. P. James Rich has resigned as Director of Research from Mission Dry Corporation to accept a special research assignment with Gentry Inc.

Dr. Arthur N. Prater, of Gentry Inc., has been appointed Chairman of the Research Committee for the American Spice Trade Association.

NORTHEAST SECTION

The following officers will serve the Northeast Section for the year 1949-1950:

Chairman: Ernest C. Crocker, Arthur D. Little, Inc., 30 Memorial Drive, Cambridge 42, Mass.

Vice-Chairman: Newton R. Cole, Walter Baker & Co., Division General Foods, Dorchester, Mass.

Secretary: J. J. Austin, Austin Industries, Sudbury, Mass.

Treasurer: Loren B. Sjöstrom, Arthur D. Little Co., 30 Memorial Drive, Cambridge 42, Mass.

Representative National Council for 2 years: William B. Esselen, Jr., Department of Food Technology, University of Massachusetts, Amherst, Mass.

Members of Executive Committee for 2 years: Robert S. Harris, Department of Food Technology, Massachusetts Institute of Technology, Cambridge 39, Mass.; John M. Milne, Brigham's Inc., Boston, Mass.

The complete roster of the Executive Committee for 1949-1950 will be the above named individuals and, also, the present National Councilor, Michel P. Vucassovich, whose term carries over for one year.

The first meeting of the 1949-1950 season was a dinner meeting, held on October 6 at the Women's Educational and Industrial Union, Boston. Mr. L. W. Johnson, Manager of Quality Control, United Farmer's Cooperative, Morrisville, Vermont, spoke on the "Problems of the New England Milk Industry, particularly Those of the Cooperative." Three recently released, short films on the "Distribution and Consumption of Foods" were also shown.

WESTERN NEW YORK SECTION

On October 8, the Western New York Section met at Cornell University, Ithaca, New York, for an afternoon and dinner program. At the afternoon meeting Mr. John Fix, Research Representative of the American Can Co., Rochester, N. Y., presided, and the following topics were discussed.

I. F. T. Membership. Dr. George J. Hucker, Professor of Bacteriology, New York State Agricultural Experiment Station, Geneva, N. Y.

Soil Resources and the Food Production Potentials of the United States. Dr. Richard Bradfield, Head of Department and Professor of Soil Technology, Cornell University, Ithaca, N. Y.

Insecticides and Food Production. Dr. W. A. Rawlins, Professor of Entomology, Cornell University, Ithaca, N. Y.

Opportunities in the Food Industry for Technically Trained Personnel. Dr. J. C. Mauer, Director of Research, National Dairy Research Laboratories, Inc., Oakdale, Long Island, N. Y.; Mr. Henry L. Page, General Manager, Producers-Canners Cooperative, Inc., North Collins, N. Y.

Following dinner, members heard a talk by Dr. B. L. Herrington, Professor of Dairy Chemistry, Cornell University, Ithaca, N. Y., on the topic "Some Notes of a Traveler."

Mr. Thomas G. Tolman, formerly Production Manager for Henry and Henry Co. of Buffalo, will take up new duties at J. Hungerford Smith Co., Rochester, New York. His new title is Technical Director and Laboratory Manager.

Notes and Letters

(Continued from page 8, preceding technical papers)

Identification by O-sera is usually sufficient but further tests can be made as needed. Occasionally it is necessary to make subcultures for serological or biochemical tests. We have found that *S. pullorum* is often missed on SS agar but it usually grows well on bismuth sulphite agar. Non-motile cultures which agglutinate with 06 serum are considered *S. pullorum*.

The amounts of powder or other egg products can be adjusted to meet the needs of the investigation. We have dispersed whole cakes and omelets in one or two liter amounts of tetrathionate broth and dispensed appropriate aliquots to check the survival of Salmonella. However, the method of identification and enumeration is the same. The various operations take very little time and the estimate is usually available on the second day. We think the method is much simpler than that proposed by Ayres.

N. E. GIBBONS
Bacteriologist, Food Investigations,
National Research Council, Ottawa, Canada

"THERE'S NO PRACTICAL WAY TO IMPROVE OUR BEEF STEW..."

said a well-known food processor— and his entire technical staff!

562 families were each given samples of *two* batches of this manufacturer's beef stew, identical in every respect except for the addition of a small amount of Ac'cent in the processing of one. The cans were marked with code numbers, and the housewife was told to serve *both* at the same meal, on separate plates . . . then ask every member of her family, "Which do you prefer?"

1131 of these people (out of 1995) preferred the stew with Ac'cent! Here was the *consumer's* answer to the manufacturer's assertion that his product was "as good as we can make it commercially."

YET NOW—

CONVINCED BY THIS ACTUAL CONSUMER TEST— HE IS IMPROVING IT... WITH A BIT OF AC'CENT!

He made this test!

At no obligation to you, we will welcome the opportunity to demonstrate what Ac'cent can do in *one of your own foods* . . . to pay the entire cost of a test run in your plant, including payment for the materials used! Our food technologists will conduct the test. *You* be the judge.

Ac'cent is not a flavoring, not a condiment. It adds no flavor, aroma or color of its own. It simply, but wonderfully, brings out—and *holds*—the *natural* flavors of foods. With Ac'cent, you use your own formulas; you prepare and cook as usual —just *add* Ac'cent.

Wire or phone for first-hand, accurate, full information. Let us discuss with you the possibility of Ac'cent in foods you pack.

Ac'cent is a 99+% pure monosodium glutamate derived from vegetable sources. It is a wholesome product of Nature. In 100 and 200 lb. drums.

Amino Products Division
International Minerals & Chemical Corp.,
General Offices: 20 N. Wacker Drive
Chicago 6, Illinois

Ac'cent® makes food flavors sing!

Trade Mark "Ac'cent" Reg. U.S. Pat. Off. Printed in U.S.A.